

REMARKS

In the Office Action, the Examiner indicated that claims 1 through 21 are pending in the application. The Examiner rejected claims 1-5, 7-17, and 19-21, and allowed claims 6 and 18.

The Present Invention

The present invention relates to apparatus and methods for effectively powering up an electronic circuit using telephone line power, without causing "lock-up", a condition that occurs if an electronic circuit (in particular, a CMOS circuit) is powered up by the telephone line improperly. In particular, the digital logic (CMOS) in telephone line powered electronic circuits can appear as a variable resistor that depends upon the voltage across the telephone line. The variable resistor of the digital logic can appear as a short to the telephone line power, thereby preventing the line powered electronic circuit from being powered at acceptable voltage levels. As a result of being improperly powered, the digital logic enters a lock up condition and the telephone line powered electronic circuit fails to operate properly.

The present invention solves this problem by first conditioning the tip/ring voltage so that voltage detection circuitry monitors this conditioned voltage rather than the tip/ring voltage.

U.S. Patent No. 6,411,680 to Rouse

U.S. Patent No. 6,411,680 to Rouse teaches an over-voltage protection circuit, whereby a sensor for detecting a DC voltage above a first level is connected between terminals of a telephonic apparatus. It is directed to chips using bipolar, high voltage chips, i.e., not to CMOS. When the sensor detects a DC voltage between the terminals that is above a first level, it prevents the switch from connecting the circuitry between the terminals. This protects telephonic circuitry and apparatus from DC voltages on the order of 300-500 volts. Specifically, Rouse identifies prior art whereby telephonic apparatus are designed to be capable of surviving voltages above the normal working range of the telephone apparatus, even up to 120 volts, but Rouse addresses the problem that might occur when voltages higher than 120 volts are applied to the telephone line, and does so by providing over-voltage protection, which senses the presence of a DC voltage level above an over-voltage amount and prevents connection of the telephonic circuitry if the over-voltage amount has been exceeded.

French Publication No. 2,495,866 to Gaudel

French Publication No. 2,495,866 to Gaudel teaches a continuous current regulating circuit coupled to a bridge rectifier circuit to the tip and ring line of a telephone system. A series resistance is included in one of the tip or ring lines. The regulating circuit is coupled through an overvoltage protection circuit and coupling transformer to a modem. The regulating circuit time constant is several milliseconds. The arrangement enables an electrolytic capacitor coupling the protection circuit to the modem and the transformer to be

reduced in size and the low time constant of the regulating circuit allows a current control circuit for an electronic dialing control to be added. The regulating circuit has a Darlington transistor pair connected across the bridge output by resistors and zener diodes, the Darlington base being connected to a transistor of the protection circuit bias by a resistor and zener diode chain. The Examiner relies upon Gaudel for an alleged teaching of conditioning of a voltage across a telephone line.

U.S. Patent No. 5,471,524 to Colvin et al.

U.S. Patent No. 5,471,524 to Colvin et al. ("Colvin") teaches an apparatus for restricting telephone calls, having a programmable processor which allows a user to override restrictions, enter new restrictions, or change the security code for a telephone through entry of digits from a standard tone or pulse dialing telephone. The Examiner relies upon Colvin for an alleged teaching of storing up charge from a telephone prior to applying telephone line power to an electronic circuit of the phone.

U.S. Patent No. 5,783,999 to Price et al.

U.S. Patent No. 5,783,999 to Price et al. ("Price") teaches a line current protection circuit that is useful with a PCMCIA modem card. The protection circuit is adapted to detect when an excessive voltage is present across the tip and the ring leads of a telephone subscriber loop, by sensing the amount of line-current being supplied to the line interface circuitry disposed on the PCMCIA modem card. The Examiner relies upon Price for an alleged

teaching of a method of powering a DAA with a telephone line, the DAA having an electronic circuit, with the method comprising applying a reset signal to the DAA, detecting the voltage across the telephone line while the telephone line is in an on-hook state, powering the DAA with telephone line power when the detected voltage falls below the maximum thresholds, and turning off the reset signal to the electronic circuit after powering the DAA.

U.S. Patent No. 6,149,319 to Richter et al.

U.S. Patent No. 6,149,319 to Richter et al. ("Richter") teaches a method and apparatus for maintaining the voltage level of data signals supplied to an integrated circuit, such as a PCMCIA card, at the same level as power also provided to the integrated circuit. The Examiner relies upon Richter for an alleged teaching of a PCMCIA card having a CMOS electronic circuit.

U.S. Patent No. 6,204,706 to Horvath

U.S. Patent No. 6,204,706 to Horvath ("Horvath") teaches an apparatus for supervising input voltages of a multi-rail power supply which includes a corresponding voltage detector unit electrically connected to each rail for ascertaining values of the input voltages of each rail. The Examiner relies upon Horvath for an alleged teaching of the use of a time delay element for delaying a reset signal.

Rejection of Claims under 35 U.S.C. §103(a)

On pages 2-5 of the Office Action, the Examiner rejected claims 1-5, 7-9, 13-17, and 20 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,411,680 to Rousse in view of French Publication No. 2,495,866 to Gaudel. On page 5 of the Office Action, the Examiner rejected claims 10-11 and 19 under 35 U.S.C. §103(a) as being unpatentable over Rousse in view of Gaudel and further in view of U.S. Patent No. 5,471,524 to Colvin et al. On pages 5-7 of the Office Action, the Examiner rejected claim 12 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,783,999 to Price et al. in view of U.S. Patent No. 6,149,319 to Richter et al. and Rousse, and on page 7 the Examiner rejected claim 21 under 35 U.S.C. §103(a) as being unpatentable over Rousse in view of Gaudel and further in view of U.S. Patent No. 6,204,706 to Horvath.

The Examiner has not Established a *prima facie* Case of Obviousness

As set forth in the MPEP:

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skilled in the art, to modify the reference or to combine reference teachings.

MPEP 2143

The Examiner has not met this burden. The Examiner acknowledges that Rousse does not teach conditioning the voltage across the telephone line. The fact that Gaudel may or may not teach the conditioning of voltage across a telephone line does not render the claimed invention obvious. Applicant does not claim to have invented the concept of or structure for

conditioning voltage across a telephone line. However, in the specific application claimed in the present invention, conditioning of the tip/ring voltage before detecting the voltage across the telephone line prevents a lock up condition that occurs if an electronic circuit, in particular a CMOS circuit is powered up by the telephone line improperly. This problem is very clearly recognized by the applicant in the present application and is solved by the claimed invention.

By contrast, neither Rousse nor Gaudel recognizes this problem, nor do they have any reason to. Neither of these references are concerned with the prevention of the lock up condition. Instead, both of them are over-voltage protection circuits to prevent switching to connect the telephone circuitry to the tip ring line. This is not the problem being solved by the present invention, and neither of them contemplate the claimed solution.

In other words, neither Rousse nor Gaudel teach (as admitted by the Examiner) or suggest a solution to the problem identified in the present invention, and neither teach or suggest the claimed method and/or structure. Further, nothing in either of these references would provide motivation to a practitioner of ordinary skill in this art to combine the two references, since neither reference recognizes the problem solved by the claimed invention.

Applicant notes also that none of the references relied upon to reject claim 12 (Price, Richter, or Rousse) teach or suggest the method of claim 12, either alone or in combination nor provide any motivation for combining them to achieve the claimed invention.

Independent claims 1, 12, and 13 specifically recite these elements not taught or suggested by the prior art. Independent claim 12 has been amended to recite the conditioned voltage. Accordingly, independent claims 1, 12, and 13, and all claims depending thereon

(claims 2-5, 7-11, 14-17, and 19-21) patentably define over the cited references and are in condition for allowance.

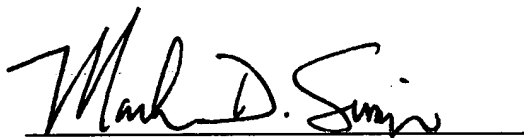
Conclusion

The present invention is not taught or suggested by the prior art. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of the claims. An early Notice of Allowance is earnestly solicited.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayment associated with this communication to Deposit Account No. 19-5425.

Respectfully submitted

JUNE 25, 2004
Date


Mark D. Simpson, Esquire
Registration No. 32,942

SYNNESTVEDT & LECHNER LLP
2600 ARAMARK Tower
1101 Market Street
Philadelphia, PA 19107

Telephone: (215) 923-4466
Facsimile: (215) 923-2189